

REMARKS

Claims 1-19 are pending, with claims 1, 15, 16, 17, 18 and 19 being the independent claims. Claim 1 has been amended to clarify its wording.

Claims 1, 3-10 and 12-14 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,799,763 (Dehrmann).

Referring to FIGs. 2-4 of the present application, a bridging clutch (56) of a hydrodynamic torque converter (1) provides a torque-transmitting connection between a housing (5), which is rotationally fixed to a drive unit, and a transmission through a turbine wheel (19). To provide such a connection, the bridging clutch comprises a displaceable piston (54) which engages first and second friction linings (68) that are fixed to the turbine. See specification, page 14, paragraph [0029]. Engagement between the piston and the friction linings generates heat leading to a power loss and minimized by fluid which passes around the engaged friction elements so as to absorb heat from them..

To intensify the heat exchange in accordance with the present invention, the friction linings (68) each have a continuous arcuate inner side (85), shown in FIG. 2, each provided with a recess (80) that is continuously open *over its entire circumferential length* at the inner side. Fluid flowing through the recess (80) adheres to the continuous inner circumference of the inner side (85) creating a velocity gradient between the area immediately adjacent to this continuous circumference and the area of the recess (80) which is spaced radially inwardly from the inner side. See specification, page 17, paragraph [0035]. As a result of vigorous mixing between the cooling medium already “trapped” in the opening and continuously incoming fresh fluid, the friction linings are being effectively cooled. *Id.*, FIG. 2.

Thus, the invention discloses a large recess continuously opening along its entire circumferential length in the inner radial side of the friction lining between the inflow and outflow areas so as to create an intensive heat exchange in the area of the friction lining. The continuously open recess (80) is equally effective for the heat exchange regardless of whether a friction lining carrier (66) that holds the friction linings (68) has an opening (88) geometrically conforming to the recess (80), or different from the recess (80) or not having the recess (88) at all. See FIGs. 2, 3 and 4, respectively.

Claim 1 has been amended to clarify its language to recite that a recess is continuously open over an entire circumferential length thereof at a radially inner side of a friction lining between an inflow area and an outflow area.

Dehrmann teaches a set of arcuate grooves that recess material of friction linings (15-18) so that a larger portion of circumferential length does not open in the inner radial side of the friction linings. See FIGs. 4-6. For example, FIG. 4 of Dehrmann shows a plurality of spaced arcuate grooves 19 having its entire circumferential length spaced radially outwards from an inner side of a friction lining 15, 17 and, thus, not continuously opening at this inner side. Analogously, FIG. 5 of Dehrmann shows spaced grooves 19 each of which does not continuously open along its entire length at the inner side of the lining 16, 18. Moreover, a large recess extending radially inwards from the inner side of the lining also does not continuously open at the inner side of the lining along the recess's entire length between the inflow and outflow areas, since the inner side is slotted by a plurality of grooves 19. Such a configuration of friction linings is associated with the formation of a vortex in the outflow area of the groove, which impedes the inflow of fresh fluid via the inflow area of the groove and, thus, prevents

effective fluid exchange in the area of the heated friction surface. See specification, page 4, paragraph [0006]; and FIG. 5 of the present application.

Dehrmann shows a plurality of grooves 19 formed within each friction lining (15-18). None of the grooves is continuously open along its entire length at the inner side of the friction lining between the inflow and outflow areas, as recited in amended independent claim 1. Accordingly, Dehrmann does not teach all of the elements as recited in amended claim 1, which is, thus, patentable over the cited reference.

Claims 4, 5, 7, 8, 9, and 10 depend directly or indirectly from amended claim 1 and, thus, benefit from its allowability. Withdrawal of the §102(b) rejection of claims 1, 4 and 5 is respectfully requested.

New Claims 15-19

New independent claim 15 corresponds to allowable original dependent claim 2 written in independent form. Since claim 2 was allowable, new claim 15 is also allowable.

New independent claim 16 corresponds to original dependent claim 3 written in independent form. In particular, claim 16 recites a recess continuously open along its entire circumferential length at the inner side of the lining. In addition, claim 16 recites a recess provided in a lining carrier and dimensioned differently from the recess of friction lining. In contrast, Dehrmann does not teach the recess in the lining, as discussed above. Nor does Dehrmann teach any recess in the carrier, see FIGs. 2 and 3. Therefore, claim 16 is allowable.

New independent claim 17 corresponds to original dependent claim 6 written in independent form. Claim 17, like independent claims 1 and 16, recites a recess continuously open at the inner side of the lining along its entire circumferential length between the inflow and outflow areas. Claim 17 further recites that the area of the lining over which the recess extends

does not have interruptions. In contrast, Dehrmann, as discussed above, teaches a plurality of interruptions along the inner radial side of the friction lining. Thus, claim 17 is patentable over Dehrmann.

New independent claim 18 corresponds to allowable original dependent claim 11 written in independent form. Accordingly, claim 18 is allowable.

Finally, new claim 19 corresponds to original dependent claim 12 written in independent form. Dehrmann does not teach a continuously open recess, as recited in claim 19. Nor does Dehrmann teach a recess provided in a carrier, which is also recited in claim 19. Accordingly, claim 19 is patentable over the applied reference.

Based on all of the above, it is respectfully submitted that the present application is now in proper condition for allowance. Prompt and favorable action to this effect and early passing of this application to issue are respectfully solicited.

A check in the amount \$600 is enclosed in payment for the addition of 3 new independent claims in excess of three. If any additional fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
COHEN, PONTANI, LIEBERMAN & PAVANE

By



Thomas C. Pontani
Reg. No. 29,763
551 Fifth Avenue, Suite 1210
New York, New York 10176
(212) 687-2770

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